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ABSTRACT

A workshop of interested science teachers from the metropolitan area of Illinois sought to increase their awareness of the career opportunities for their students in the biological and agricultural occupations that exist locally. The main purpose of the project was to establish programs in the metropolitan areas designed to match the interests of students with the needs of business/industry in these occupational fields. Employed methodological procedures included: (1) designing and conducting appropriate workshops, (2) evaluating their effectiveness, and (3) recruiting participants. Some 62 teachers from secondary schools in Chicago were involved in the eleven 3-hour sessions. Participant proposals and questionnaire responses provided the evaluation data from which findings and conclusions were generated. Most of the participants indicated they would be initiating new programs or including some aspect of applied biological occupations in their existing programs and expressed a need to acquire appropriate occupational technical knowledge and skills. (Author/SN)

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RENEWAL OF CURRENTLY EMPLOYED TEACHERS AS TEACHERS OF APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS

FINAL REPORT

PROJECT NO. PDT-A3-006

HOLLIE B. THOMAS, PROJECT DIRECTOR
JAMES E. GRANT, RESEARCH ASSOCIATE
EVERETT W. HARRIS, RESEARCH ASSOCIATE

JUNE 1973

AGRICULTURAL EDUCATION DIVISION
VOCATIONAL AND TECHNICAL EDUCATION DEPARTMENT
COLLEGE OF EDUCATION
UNIVERSITY OF ILLINOIS
URBANA, ILLINOIS

VT020570

ABSTRACT

Renewal of Currently Employed Teachers
As Teachers of Applied Biological and
Agricultural Occupations

Hollie B. Thomas, Project Director
James E. Grant and Everett Harris, Research Associates
University of Illinois at Urbana-Champaign

Purpose

The major purpose of the project was to establish programs in the Illinois metropolitan areas designed to match the interests of students and the employment needs of business/industry requiring knowledges and skills that are of an applied biological or agricultural nature by renewal of currently employed metropolitan science teachers.

Procedure

The project included four major phases: (1) designing appropriate workshop experiences, (2) recruiting participants, (3) conducting the workshops, and (4) evaluating the workshop experiences.

The development of the workshop experiences was a joint activity of both the enrollees and the project staff. The agenda included a sequence of learning events resulting in the development of, and the plans for implementing, some aspect of a program in applied biological occupations by each participant for his school. The learning events included developing a rationale for a local program of applied biological occupations, identifying the knowledges and skills and competency levels appropriate for secondary students that will provide opportunities for employment in applied biological occupations, identifying appropriate curriculum and instructional resources, and identifying appropriate laboratory experiences.

The target population for the workshop was the science teachers in metropolitan Chicago and East St. Louis secondary schools. Key administrators for the Chicago Public Schools and Metropolitan East St. Louis were contacted by the project staff. A promotional brochure was developed by the project staff and mailed to administrative units in Cook, DuPage, Lake and St. Clair counties.

A series of eleven, three-hour sessions were scheduled to begin during the week of January 15, 1973.

The workshop evaluation consisted of the participants' proposals and a participant self-rating questionnaire developed by the project staff. The instrument was administered as a pretest during the first session and as a posttest at the conclusion of the workshop.

Outcomes

A greater number of participants than expected in the Chicago area required two workshop locations in suburban Chicago -- Country Club Hills and Palatine. A third group met in downtown Chicago. A total of 62 teachers participated in the workshops. The East St. Louis area workshop was cancelled because of inadequate pre-registration response.

The plans developed by the participants for implementing some aspect of a program in applied biological occupations ranged from introducing a "mini course in landscaping" for a ninth grade biology class of slow learners to reorienting an existing high school science curriculum. In most situations where more than one teacher from a school was enrolled in a workshop, the teachers teamed up to develop a single plan for some aspect of applied biological occupations. During the workshop, participants collected data on local student interests, occupational

opportunities, wrote course outlines and performance objectives and submitted proposals to curriculum committees.

Conclusions

The workshops in applied biological and agricultural occupations were judged to be quite effective in making metropolitan science teachers aware of the career opportunities that exist in the metropolitan areas. Most of the participants indicated they would be initiating new programs or including some aspect of applied biological occupations in their existing programs. The participants expressed a need to acquire appropriate occupational technical knowledge and skills.

Renewal of Currently Employed Teachers As Teachers of Applied Biological and Agricultural Occupations

Final Report
Project No. PDT-A3-006

University of Illinois Project Staff
Hollie B. Thomas, Project Director
James E. Grant, Research Associate
Everett W. Harris, Research Associate

June 1973

The project reported herein was performed pursuant to a contract with the State of Illinois, Board of Vocational Education and Rehabilitation, Professional and Curriculum Development Unit. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgement in the conduct of the project. Points of view or opinions stated, do not, therefore, necessarily represent official Board of Vocational Education and Rehabilitation position or policy.

Agricultural Education Division
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Introduction

The metropolitan areas of Illinois contain abundant employment opportunities requiring knowledges and skills that are of an applied biological or agricultural nature. Secondary students in the Chicago metropolitan area have expressed desires for preparation in applied biological and agricultural careers. In addition, there are few programs in the metropolitan secondary schools which are preparing secondary students for careers requiring knowledges and skills that are of an applied biological or agricultural nature.

A major problem is the shortage of teachers willing to work in the metropolitan areas, competent to establish programs in applied biological and agricultural occupations. There exists a supply of currently employed teachers of science and other areas who could be renewed for this task. These teachers needed to be identified and learning activities developed to assist them to become proficient in those competencies required of instructors of applied biological and agricultural occupations in urban areas.

Objectives of the Project

The major purpose of the project was to establish programs designed to match the interests of students and the employment needs of business/industry requiring knowledges and skills that are of an applied biological or agricultural nature by renewal of currently employed teachers of science and other areas in Illinois metropolitan areas.

The specific objectives were:

1. To design appropriate workshop experiences that will renew currently employed teachers as teachers of applied biological and agricultural occupations.

2. To recruit a minimum of 40 participants, 20 in each of the two metropolitan areas, from the ranks of currently employed teachers of science and other disciplines related to agricultural and applied biological occupations.
3. To offer the appropriately designed experiences to the teachers recruited from the schools indigenous to the respective metropolitan areas.
4. To evaluate the activity such that the degree to which the participants feel competent to teach courses and develop programs in applied biological and agricultural occupations is determined.

Procedures

As outlined by the objectives, the project included four major phases: (1) designing appropriate workshop experiences, (2) recruiting participants, (3) conducting the workshops, and (4) evaluating the workshop experiences. The timetable of activities appears in Appendix G.

Designing appropriate workshop experiences.

The development of workshop experiences was a joint activity of both the enrollees and the project staff. The agenda included a sequence of events which resulted in the development of, and the plans for implementing, a program matching the interests of students and the employment demand of business/industry requiring knowledges and skills of an applied biological nature by each workshop participant. The topics are included in Appendix D, Course Outline. The following activities were included in the workshop:

1. Developing a rationale for a local program of applied biological and agricultural occupations. Information on career education concepts and local surveys conducted to determine employment opportunities and student interests provided direction for local teachers in planning new courses or in redesigning present courses.

2. Identifying the knowledges and skills and competency levels appropriate for secondary students which will provide opportunities for employment in applied biological and agricultural occupations. Occupational analyses, curriculum content, educational objectives, identifying students, and organizing advisory councils were introduced.
3. Identifying curriculum and instructional resources which teachers may use to prepare students with competencies needed for employment in applied biological and agricultural occupations. Materials developed in Illinois and other states were examined in terms of their usefulness in the proposed programs developed by workshop participants.
4. Identifying laboratory experiences appropriate to teaching an applied aspect of science courses. Demonstrations of applied science laboratory techniques were introduced.

Recruiting workshop participants.

The target population for the workshop was the science teachers in metropolitan Chicago and East St. Louis secondary schools.

During September and October 1972, key administrators for the Chicago Public Schools and Metro East St. Louis schools were contacted. The purpose of these contacts was to promote the project and to devise procedures for recruitment.

A brochure (Appendix D) was developed by the project staff and mailed to administrative units in Cook, DuPage, Lake, and St. Clair counties during November 1972. The purposes of the brochure were to announce the workshops and to solicit enrollment by including a tearsheet. Potential participants had the option of enrolling for one unit of graduate credit or participating in the workshop for no credit.

The planned workshop for Metro East St. Louis was cancelled in early January 1973. There were too few participants to hold the workshop.

There were a greater number of participants than expected in the Chicago

area. This required two workshop locations in suburban Chicago: Palatine and Country Club Hills. A third group met at the Chicago Public School Administrative offices, downtown Chicago. A total of 62 teachers participated in the workshops. The workshop participants are listed in Appendix A.

Conducting the workshops.

Each group of participants met for eleven three-hour sessions beginning the week of January 15, 1973. The workshop activities were similar for the three groups of participants. A summary of the workshop activities follow.

I. Introduction and Orientation.

1. The workshop staff was instroduced and the participants introduced themselves, explaining why they had decided to enroll in the workshop.
2. A pre-test, developed by the project staff (Appendix E), was administered to the participants. This instrument is discussed in greater detail in a later section.
3. The rationale for the workshop was summarized. The major items were as follows:
   - 3.1 There are few applied biological programs available to metropolitan students in Illinois.
   - 3.2 Few teachers prepared by Illinois colleges and universities choose to teach applied biological and agricultural programs in the metropolitan areas.
   - 3.3 Selected findings of the Thomas 1971 study entitled, Metropolitan Programs in Applied Biological and Agricultural Occupations: A Need and Attitude Study were presented. These findings revealed there was both employment opportunities and student interest.
4. The primary purpose of the workshop was to assist teachers in the basic sciences to develop programs with knowledges and skills that are of an applied biological nature matching the interests of students and the employment needs of business/ industry.

5. The anticipated outcomes of the workshop were identified and discussed. These anticipated outcomes appear in the Term Project guidelines, Appendix D.
6. The specific problems and concerns of the participants were identified and organized into major objectives. The resulting course of study appears in Appendix D.

II. Understanding basic concepts in Applied Biological Occupations.

1. Concepts of career education were discussed.
   1.1 The USOE film, "Career Education" was shown.
   1.2 The Illinois Model for Career Education was discussed.
   1.3 Participants defined a concept of career education.
2. Participants distinguished between, and related the concepts of career education, vocational education, and applied biological occupations.
3. Using examples of basic science objectives and applied biological objectives, the participants distinguished between and developed applied objectives from current science objectives.

III. Discovering career opportunities in Applied Biological Occupations.

1. The employment opportunities in applied biological and agricultural occupations were identified.
   1.1 The kinds of occupational employment data needed for applied biological occupation programs were outlined.
   1.2 Participants collected employment data with the survey form appearing in Appendix D.
2. Student interests in applied biological occupations were assessed.
   2.1 Occupational decision-making was reviewed.
   2.2 The role of student interest data occupational program planning and development was outlined.
   2.3 Selected applied biological and agricultural student interest instruments were reviewed.
   2.4 Participants collected student interest data.

IV. Employer and job requirements for persons employed in Applied Biological Occupations.

1. Competencies required of persons employed in applied biological occupations were identified.
2. Occupations requiring similar competencies were identified.

V. Involving the Community through an Advisory Council.

1. Participant experiences with advisory groups were discussed.
2. A list of activities appropriate to an advisory council for a program of applied biological occupations was developed.
3. Alternative procedures to employ in organizing an advisory council were outlined.

VI. Selecting a program of Applied Biological Occupations to offer students.

1. Dr. Avery Gray, Purdue University, explained the planning, development and implementation of agricultural occupations programs in Indiana metropolitan schools.
2. The participants presented interim reports of their plans for implementing a program of applied biological occupations.

VII. Selecting course content.

1. Dr. Avery Gray, Mr. Eugene Trotter, University of Illinois, and Mr. Allan Utech, DVTE Springfield, presented curriculum materials developed for applied biological and agricultural occupations education.

VIII. Designing instructional units.

1. Mr. Eugene Trotter presented instructional resource materials for appraisal by the participants.
2. Mr. Donald Barrett, McHenry Community College, identified appropriate means for facilitating applied biological objectives with the participants.

IX. Student youth groups.

1. Mr. Allan Utech explained the role of student youth groups appropriate to a program of applied biological occupations in metropolitan areas.

Evaluating the Workshop Experiences.

Rationale for the Pretest and Posttest. The purpose of administering a pretest during the first session of the workshop was to determine the participants basic knowledge of vocational concepts and experiences regarding the development of programs in applied biological and agricultural occupations. The pretest information aided the workshop developers in formulating the content of the workshop based on the needs and interests of the participants.

The posttest served as a follow-up to the pretest. The data collected assisted the evaluators in determining to what extent the workshop activities meet the established criteria.

Population. The population involved in the workshop consisted of those teachers of science who completed applications and enrolled in the workshop during the first class meeting. A total of 50 teachers of science in three locations (City of Chicago, Country Club Hills and Palatine) completed a self-evaluation questionnaire. However, twelve other teachers that were involved in the workshop did not complete either the pretest or posttest questionnaires because they were either added to the workshop after the pretest was administered or withdrew from the workshop before the posttest.

Instrumentation. In developing the instrument to collect data, the objectives of the project and competencies needed by teachers to meet these objectives were considered. After formulating measurable objectives for the workshop, a list of

items was compiled for suggestions and criticisms. These items were then revised and printed into a teacher's self-rating questionnaire.

The final questionnaire (Appendix E) consisted of 13 items. A four point scale ranging from Very Confident to Extremely Unconfident was provided for the response. The questionnaire was designed to measure criteria, believed to be necessary for teachers to develop effective programs in applied biological and agricultural occupations in the metropolitan areas. A simple multiple-choice with numerical answers were used to facilitate responses and expedite time.

Results. In order to compute a mean score for each of the items a weight was given for the responses as follows:

Very Confident	=	4
Confident	=	3
Unconfident	=	2
Extremely Unconfident	=	1

These weights are identical to those shown on the questionnaire included in Appendix E.

When the pretest and posttest (questionnaire) total means on all 13 items were compared from the 50 participants' responses, the pretest total mean of 2.20 (Unconfident) increased to a posttest total mean of 3.01 (Confident). There was a total mean gain of 0.80. It was rated that the pretest-posttest had a gain on all 13 items. The lowest gain was that of 0.24 on Item 8, "Organizing advisory councils", and the highest gain that of 1.12 on Item 2, "Explaining the program to others." Other high gains observed were on Item 5, "Developing courses," Item 10, "Explaining career education," Item 12, "Securing resource materials," and Item 13, "Determining employment opportunities." Though an increase in pretest-posttest total means was observed, this gain may not

necessarily be attributed to the workshop, since conditions recommended for experimental and controlled groups were not established.

DVTE Workshop Evaluation Participant's Form. During the final session of the workshop each of the 50 participants completed an evaluation form with 10 items on a continuum. This form, Appendix F, was supplied by the Illinois Division of Vocational and Technical Education, Springfield, Illinois (DVTE), the funding agency for the workshop. The participants were given the option of mailing these evaluation forms directly to DVTE or returning them to the Project Director of the workshop. A total of 43 participants elected to return these forms to the Project Director. The data from the evaluation forms were computed and summarized.

Results. In order to compute a mean score for each of the items a weight was given for the responses as follows:

/ 4 / 3 / 2 / 1 / DVTE

These weights and frequencies are recorded in Appendix F.

After the means were computed for all of the items on the DVTE Evaluation forms, it was observed that Item 7, "To what degree will what you have learned affect your behavior in your job," had the highest mean (3.35). Item 9, "How much material was presented," had the lowest mean (2.81); however, it is difficult to interpret this item because there appear to be two scales. On Item 4 and 11 which deal with recommendations, it was observed that the participants were willing to participate in a follow-up workshop and/or would recommend a similar workshop to others.

The total effectiveness of the workshop cannot be concluded on the basis of the DVTE Evaluation Forms completed; therefore, it is recommended that a follow-up evaluation form be administered to all participants completing the

workshop within one year after the termination of the workshop.

Judgments and Recommendations Concerning Activities and Possible Future Activities

The workshops in applied biological and agricultural occupations were judged to be quite effective in making urban teachers of science aware of the career opportunities that exist in the metropolitan areas. The workshops that were conducted in the City of Chicago, Country Club Hills and Palatine should not be considered a "capstone" in urban applied biological occupations. These workshops were only a foundation for a series of other courses that must follow if teachers of science are to gain the competency needed to implement effective programs in applied biological occupations.

Many of the participants indicated that they would be initiating new programs or including some aspect of applied biological occupation in their existing programs. The participants expressed a great concern over future or follow-up courses in ornamental horticulture and animal science that would enable them to develop a degree of competency. Perhaps a series of mini courses along with curriculum development would meet the needs of all the participants if offered in the near future.

More specific judgments and recommendations are as follows:

Judgments of the Project.

1. Metropolitan science teachers who volunteer for this type of activity are highly motivated to learn. They could be characterized as early adapters.
2. Metropolitan science teachers are interested in orienting some of their courses toward occupational preparation at less than a baccalaureate level.

3. The problem-solving approach to learning activities with science teachers leads to some frustration. Written comments by some participants indicate they became more receptive to the problem-solving approach as the workshop progressed.
4. An outcome centered on the development of some aspect of applied biological occupations for implementation in a local school is an essential element in getting programs started.
5. It is very likely the participants will need further assistance if programs of major scope are to be initiated.
6. The nature of the workshop and participants resulted in an awareness stage. Most participants believe they have inadequate occupational technical knowledge and skills.

Recommendations for future activities.

1. A follow-up of the participants should be conducted during the 1973-1974 school year to determine whether or not applied biological occupation's activities were initiated. This would allow a more valid evaluation of the workshop effectiveness.
2. Many participants will require on-site services of persons with expertise in establishing applied biological and agricultural occupations programs to assist in implementing local plans.
3. The participants identified several kinds of future in-service education needs, e.g., hands on experiences in the various aspects of ornamental horticulture and small animal care. If these participants are to become proficient in occupational programs, their in-service requirements will need to be coordinated.

Appendix A

Workshop Participants

Participants - Workshop in Applied Biological Occupations April 1973

Name	School & Address	Position or Job Function	No. of Yrs. Teaching	Degrees Held & Institution
Mary S. Anderson	Palatine H.S. 150 E. Wood Palatine 60067	Bio. Teacher	1-3 yrs.	B.S., University of Illinois
Marion S. Baran	Maine East Twp. 2601 Dempster St. Park Ridge 60068	Bio. Teacher	14 yrs. or abv.	B.S., University of Illinois M.S., Northern State Univ.
James A. Borkowski	Wheeling H. S. 900 S. Elmhurst Wheeling 60090	Bio. Teacher	4-8 yrs.	B.S., Northern
Catherine Brooks	Wheeling H. S. 900 S. Elmhurst Wheeling 60090	Bio. Teacher	1-3 yrs.	B.S., Wisconsin
Mary Ann Bulger	Lyons H. S. 4900 Willow Spg. Rd. Western Springs 60558	Bio. Teacher	9-13 yrs.	B.A., St. Francis M.N.S., Oklahoma
Patrick Cain	Willowbrook H. S. 1250 S. Ardmore Villa Park 60181	Bio. Teacher	14 yrs. or abv.	B.S., ISU M.M., Wisconsin
Sharon Carlson	Carl Sandburg H. S. 1334 La Grange Rd. Orland Park 60462	Bio. & Phy. Sci. Teacher	4-8 yrs.	B.S., Mundelin
John Clark	Bremen H. S. 15233 S. Crawford Midlothian 60445	Bio. Teacher	4-8 yrs.	B.S., ISU
Paul Chamness	Lyons H. S. 4900 Willow Spg. Rd. Western Springs 60558	Phy. Sci.	14 yrs. or abv.	B.S., Illinois State M.S., ISU
Patricia Costello	John Hersey H. S. 1900 E. Thomas Ave. Arlington Heights 60004	Bio. & Micro Bio. Teacher	14 yrs. or abv.	B.S., Xavier M.S., University of Illinois

Name	School & Address	Position or Job Function	No. of Yrs. Teaching	Degrees Held & Institution
William Crater	Bremen H.S. 15233 S. Crawford Midlothian 60445	Dept. Chrm. of Science	9-13 yrs.	B.S., ISU M.S., ISU
Carl Crowe	Hyde Park H.S. 6220 S. Stony Island Chicago 60637	Bio. Teacher	4-8 yrs.	
Herbert Dorn	Wheeling H.S. 900 S. Elmhurst Wheeling 60090	Bio. Teacher	9-13 yrs.	B.S., Concordia M.A., Paterson State
Dick Ebeling	Aurora West H.S. 1201 W. New York Aurora, IL 60506	Chem. Teacher Chrm. Sci. Dept.	14 yrs. or abv.	
Marlene Evison	Morgan Park H.S. 1744 W. Pryor Chicago 60643	Bio. Teacher	4-8 yrs.	B.A., Ohio Wesleyan
Gloria Felchner	Carl Sandburg 1334 LaGrange Rd. Orland Park 60462	Bio. Teacher	4-8 yrs.	B.S. Eastern
Edward Feyereisen	Tinley Park H.S. 6111 W. 175 St. Tinley Park 60477	Bio. Teacher	4-8 yrs.	B.S., St. Thomas M.N.S., S. Dakota M.Se., Chicago St.
Juanita V. Fremgen	Morton West 2400 Home Ave. Berwyn 60402	Bio. Teacher	4-8 yrs.	B.S., ISU
Donald Fletcher	James B. Conant 700 E. Cougar Tr. Hoffman Estates 60172	Bio. & Hort. Teacher		B.A., Millikin M.A., Northern
Donald Gardiner	Thornwood 170 & South Park South Holland 60473	Bio. Teacher	4-8 yrs.	B.S., Indiana M.S., "

Name	School & Address	Position or Job Function	No. of yrs. Teaching	Degrees Held & Institution
Dave Gifford	Hillcrest H.S. 175 & Crawford Country Club Hills 60477	Bio, Chem, Phy. Teacher	4-8 yrs.	
Paulette A. Glut	Thornwood H.S. 170 & South Park South Holland 60473	Bio. Teacher	1-3 yrs.	B.S., University of Illinois
Jacquelyn Guillaume	Stagg H.S. 111 & Roberts Rd. Palos Hills 60464	Bio. Teacher	1-3 yrs.	B.A., Iowa
Donald Haid	Wheeling H.S. 900 S. Elmhurst Wheeling 60090	Bio. Teacher	9-13 yrs.	B.S., St. Francis M.S., Eastern
Karan Harris	Fenger H.S. 11220 S. Wallace Chicago 60628	Bio. Teacher	1-3 yrs.	B.S., Chicago State
Betty Ivey	Chicago Vocational H. 2100 E. 87thSt. Chicago 60617	Hort. Teacher	9-13 yrs.	
Leo Kaiser	Hillcrest H.S. 175th St. & Crawford Country Club Hills 60477	Chrm. Sci. Dept.	14 yrs. or abv.	
Robert Keller	Bremen H.S. 15233 S. Crawford Midlothian 60445	Bio. Teacher	9-13 yrs.	B.S., ISU M.S., Illinois Wesleyan
Kenneth Kempton	Bremen H.S. 15233 S. Crawford Midlothian 60445	Sci. Teacher	4-8 yrs.	B.S., Northern M.S., Northern
Ann Kjellstrom	Palatine H.S. 150 E.Wood Palatine 60067	Bio. Teacher	1-3 yrs.	B.A., Principia M.A, Northwestern

Name	School & Address	Position or Job Function	No. of Yrs. Teaching	Degrees Held & Institution
Barbara Kleist	Oaklawn H. S. 9400 Southwest Hwy. Oak Lawn 60453	Environ. Sci. Teacher	1/2 yrs.	B.S., Western Illinois
Walter Klimek	Austin H. S. 231 N. Pine Ave. Chicago 60644	Hort. & Bio. Teacher	1-3 yrs.	B.S., Loyola Univ.
Stanton Knodle	William Fremd H.S. 1000 S. Quentin Rd. Palatine 60067	Bio. Teacher	14 yrs. or abv.	B.S., Northern M.S., Northern
Michael Lenich	Carl Sandburg H. S. 1334 LaGrange Rd. Orland Park 60462	Bio. Teacher	4-8 yrs.	
William Lyon	Reavis H. S. 77 & Austin Ave. Burbank 60459	Bio. Teacher	9-13 yrs.	B.S., Wisconsin M.S., Wisconsin
Susan Madura	Siena H. S. 5600 W. Washington Chicago 60644	Bio. & Chem. Teacher	1-3 yrs.	B.S., Mundelin
John J. Maisch	Lyons Twp. H. S. 4900 Willow Spg. Rd. Western Springs 60558	Sci. Teacher	14 yrs. or abv.	B.S., Northern
Sharon Mattson	William Fremd H. S. 1000 S. Quentin Rd. Palatine 60067	Bio. Teacher	9-13 yrs.	B.S., Minnesota M.S., Central Mich. U.
Mary Alice Miles	Calumet H. S. 8131 S. May Chicago 60620	Bio. Teacher	4-8 yrs.	
Warren Montgomery	Bremen H. S. 15233 S. Crawford Midlothian 60445	Chem. Teacher	4-8 yrs.	B.S., Purdue M.S., Purdue
Imogene Moody	Raymond Elem. Sch. 3663 S. Wabash, Chicago 60653	Sci. Teacher	14 yrs. or abv.	B.Ed., Chicago State M.S., Chicago State

Name	School & Address	Position or Job Function	No. of Yrs. Teaching	Degreees Held & Institution
Louis Mule	Argo Comm. H.S. 7329 W. 63 St. Argo 60501	Coordinator BWT	4-8 yrs.	B.S., St. Louis M.S., Chicago
Robert McGregor	Board of Education 228 N. LaSalle Chicago	Principal	4-8 yrs.	B.A., Univ. of Arkansas
Anthony Nusbaumer	Lyons H.S. 4900 Willow Sprg. Rd. Western Springs 60558	Bio. Teacher	9-13 yrs.	B.S., Oregon M.S., University of Ill.
Carolyn Otte	Elk Grove H.S. 500 Elk Grove Blvd. Elk Grove Village 60007	Bio. Teacher	4-8 yrs.	B.A., Grinnell, Iowa M.S., Iowa
Ronald Partyka	Thornwood H.S. 170 & South Park South Holland 60473	Dept. Chrm. Bio.	14 yrs.or abv.	B.S., St. Mary's M.S., St. Mary's (Minn.)
Marian Paxton	Wheeling H.S. 900 S. Elmhurst Wheeling 60090	Bio. Teacher	4-8 yrs.	B.S., Univ. Of Il.
Terry Powroznyk	William Fremd H.S. 1000 S. Quentin Rd. Palatine 60067	Bio. Teacher	4-8 yrs.	
Cecil Robinson	Thornwood H.S. 170 & South Park South Holland 60473	Bio. Teacher	4-8 yrs.	B.S., Ill. Inst. Tech.
Fannie Robinzine	Siena H.S. 5600 W. Washington Chicago 60644	Phy. Sci. Teacher	1-3 yrs.	B.S., Chicago State
Roy Schodtler	Palatine H.S. 150 E. Wood Palatine 60067	Bio. Teacher	4-8 yrs.	B.A., Coe, Iowa M.S., North Dakota
Kathleen Seilheimer	Palatine 150 E. Wood Palatine 60067	Bio. Teacher	4-8 yrs.	B.S., Wisconsin

Name	School & Address	Position or Job Function	No. of Yrs. Teaching	Degrees Held & Institution
Jack Shouba	Lyons Twp. H.S. 4900 Willow Sprg. Rd. Western Springs 60558	Bio. Teacher	9-13 yrs.	B.S., Northern
Lynda Smith	H.S. District #205 151 & Broadway Harvey, 60426	Bio., Gen. Sci. Teacher	4-8 yrs.	B.S., Northern
Richard Thomas	Reavis H.S. 77 & Austin Ave. Burbank 60459	Bio. Teacher	9-13 yrs.	A.B., Augustana M.S., Northern
Emily Wahlberg	Bremen H.S. 15233 S. Crawford Midlothian 60445	Bio. Teacher	9-13 yrs.	B.S., U. of Minnesota M.Ed., University of Illinois
Marie Webb	Crane H. S. 2245 W. Jackson Blvd. Chicago 60612	Bio. & Gen. Sci. Teacher	4-8 yrs.	B.S., Maryland
William White	William Fremd H.S. 1000 S. Quentin Rd. Palatine 60067	Bio. Teacher	1-3 yrs.	B.A., Indiana M.S., Indiana
Melanie Wojtulewicz	Calumet H.S. 8131 S. May Chicago 60620	Chrm. Bio Dept.	4-8 yrs.	B.S., Chicago State M.S., Chicago State
Pamela Wolfe	Willowbrook 1250 S. Ardmore Villa Park 60181	Bio. Teacher	1-3 yrs.	B.A., Ohio Wesley M.A., Indiana
Irene Worrell	Hyde Park H.S. 6220 S. Stony Island Chicago 60637	Bio. Teacher Dept.Chrm.	14 yrs. or above.	B.S., Roosevelt M.S., Chicago State
Judith Yero	Carl Sandburg 1334 LaGrange Orland Park 60462	Bio. Teacher	4-8 yrs.	B.A., Rosary College M.A. (Cand.) DePaul

Appendix B

Resource Persons

Resource Persons

Donald Barrett, Chairman, Agriculture Technology Programs, McHenry County College, Crystal Lake, Illinois.
Contribution: Curriculum and instructional materials, employer and job requirements, facilitating applied biological objectives.

Avery Gray, Purdue University, West Lafayette, Indiana.
Contribution: Program planning, instructional materials.

Myron Noonan, Department of Vocational and Practical Arts Education, Chicago Public Schools, Chicago, Illinois.
Contribution: Resource person for the downtown Chicago workshop.

Eugene Trotter, Assistant Director, Curriculum Materials Center, University of Illinois at Urbana-Champaign.
Contribution: Curriculum and instructional materials.

Allan Utech, Consultant, Applied Biological and Agricultural Occupations, Division of Vocational and Technical Education, Springfield, Illinois.
Contribution: Program planning, youth organizations and activities.

Appendix C

Workshop Correspondence

September 11, 1972

Mr. Joseph J. Dixon, Jr.
Assistant Superintendent of Schools
City of Chicago
228 North La Salle Street
Chicago, Illinois 60601

Dear Mr. Dixon:

In our continued efforts to assist [illegible] metropolitan schools in Illinois in their efforts to develop programs in applied biological science, we are planning to conduct workshops for currently employed teachers in the metropolitan areas of East St. Louis and Chicago. We hope to locate those workshops where the interest in developing courses and programs in applied biological occupations is the greatest.

In February 1971, you indicated to Dr. Thomas, Assistant Professor of Agricultural Education, that your school system would be interested in participating in one of the vocational education projects sponsored by the Department of Vocational and Technical Education, University of Illinois. This year we hope that we can coordinate our programs with your vocational education programs in Chicago.

We would appreciate your assistance in ascertaining if there is sufficient interest in the city of Chicago to merit offering such a workshop for teachers of science and others interested in occupational programs in applied biology. I would like to meet with you in Chicago to further discuss possibilities of developing these workshops. I will be able to meet with you on September 21 or 22, 28, 29 at your appointed time.

Sincerely yours,

James E. Grant
Graduate Assistant
Agricultural Education

JEG:jh
cc: Dr. Hollie B. Thomas
Mr. Allen Utech

September 14, 1972

Mr. Vernon Leirer
Director of Vocational Education
Administration Center
240 North Sixth Street
East St. Louis, Illinois 62201

Dear Mr. Leirer:

In our continued efforts to assist the metropolitan schools in Illinois in their efforts to develop programs in applied biological science and agricultural occupations, we would like to extend our efforts to include East St. Louis by conducting workshops for currently employed teachers. We hope to locate this workshop where the interest in developing courses and programs in applied biological occupations is the greatest.

We would appreciate your assistance in ascertaining if there is adequate interest in the East St. Louis area to merit offering such a workshop for teachers of science and others interested in occupational programs in applied biology. We would also like your opinion on the type of activities to include in a workshop to best serve currently employed teachers of science and related areas in East St. Louis. If you think that the teachers and school system would benefit from such a workshop I would like to meet with you in East St. Louis to further explain our program. Your suggestions and assistance will be highly appreciated.

Sincerely yours,

James E. Grant
Graduate Assistant
Agricultural Education

JEG:bb
cc: Dr. Hollie B. Thomas
Mr. Allan Utech

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

COLLEGE OF EDUCATION

DEPARTMENT OF VOCATIONAL
AND TECHNICAL EDUCATION
DIVISION OF AGRICULTURAL EDUCATION

EDUCATION BUILDING
URBANA, ILLINOIS 61801
AREA CODE 217 333-3166

TO: Local Directors and Vocational Education Administrators in the Metro East Area

FROM: Hollie B. Thomas

RE: Brochures for Workshop in Applied Biological Occupations

DATE: November 3, 1972

Please find enclosed ten brochures for the workshop in Applied Biological Occupations. Interested teachers are to complete and return the attached enrollment forms with five dollars application fee by November 20, 1972. The application fee not used for instructional materials will be returned to the participants at the close of the workshop.

Enc.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

COLLEGE OF EDUCATION

DEPARTMENT OF VOCATIONAL
AND TECHNICAL EDUCATION
DIVISION OF AGRICULTURAL EDUCATION

EDUCATION BUILDING
URBANA, ILLINOIS 61801
AREA CODE 217 333-3166

November 10, 1972

Dear

We are planning to conduct a workshop for which graduate credit may be obtained. This workshop, which is for teachers of science and other related areas in metropolitan East St. Louis, is designed to develop competencies needed in the teaching of applied biological science in urban areas. The participants will receive practical experience and develop instructional materials related to their individual school programs. We hope that interested teachers from your school will participate in this workshop. The workshop will be conveniently located near the schools of the participants.

Please find enclosed two brochures with application forms attached. Interested teachers are to complete and return the forms with a five dollar application fee by November 20, 1972. The unused portion of the application fee not used for instructional materials will be returned to the participants at the end of the workshop. Your assistance in identifying interested teachers is very much appreciated. If you would send us a list of the teachers that you think might be interested, we will communicate directly with them.

Thank you for your cooperation.

Sincerely yours,

Hollie Thomas
Assistant Professor

HT:pd
Enc.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

COLLEGE OF EDUCATION

DEPARTMENT OF VOCATIONAL
AND TECHNICAL EDUCATION
DIVISION OF AGRICULTURAL EDUCATION

EDUCATION BUILDING
URBANA, ILLINOIS 61801
AREA CODE 217 333-3166

November 13, 1972

Dear

We are planning to conduct a workshop for which graduate credit may be obtained. This workshop, which is for teachers of science and other related areas in the metropolitan area of Chicago, is designed to develop competencies needed in the teaching of applied biological science in urban areas. The participants will receive practical experience and develop instructional materials related to their individual school programs. We hope that interested teachers from your school will participate in this workshop. The workshop will be conveniently located near the schools of the participants.

Please find enclosed three brochures with application forms attached. Interested teachers are to complete and return the forms with a five dollar application fee by December 8, 1972. The unused portion of the application fee not used for instructional materials will be returned to the participants at the end of the workshop. Your assistance in identifying interested teachers is very much appreciated. If you would send us a list of the teachers that you think might be interested, we will communicate directly with them.

Thank you for your cooperation.

Sincerely yours,

Hollie Thomas
Assistant Professor

HT:pd
Enc.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

COLLEGE OF EDUCATION

DEPARTMENT OF VOCATIONAL
AND TECHNICAL EDUCATION
DIVISION OF AGRICULTURAL EDUCATION

EDUCATION BUILDING
URBANA, ILLINOIS 61801
AREA CODE 217 333-3166

December 8, 1972

Dear Principals and Administrators:

We are planning to conduct a workshop for which graduate credit may be obtained. This workshop, which is for teachers of science and other related areas in metropolitan East St. Louis, metropolitan Chicago and suburban Chicago, is designed to develop competencies needed in the teaching of applied biological science in urban areas. The participants will receive practical experience and develop instructional materials related to their individual school programs. We hope that interested teachers from your school will participate in this workshop. The workshop will be conveniently located near the schools of the participants.

Please find enclosed two brochures with application forms attached. Interested teachers are to complete and return the forms with a five dollar application fee by December 18, 1972. The unused portion of the application fee (not used for instructional materials) will be returned to the participants at the end of the workshop. Your assistance in identifying interested teachers is very much appreciated. If you would like to send us a list of the teachers that you think might be interested, we will communicate directly with them.

Thank you for your cooperation.

Sincerely yours,

Hollie B. Thomas

Hollie B. Thomas
Assistant Professor

HBT:pd
Enc.

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

COLLEGE OF EDUCATION

DEPARTMENT OF VOCATIONAL
AND TECHNICAL EDUCATION
DIVISION OF AGRICULTURAL EDUCATION

EDUCATION BUILDING
URBANA, ILLINOIS 61801
AREA CODE 217 333-3166

January 4, 1973

Dear

This letter is to inform you of the locations for the workshops in applied biological occupations scheduled for the Chicago area. In view of expressed interests, we have decided that we can best serve the participants by centrally locating two workshops in suburban Chicago thereby permitting participants to attend the workshop nearest their residence.

In southwest suburban Chicago, the workshop will commence on January 17 at 6 p.m. at Bremen Community High School, 15203 Crawford Avenue, Midlothian (Room 141).

In northwest suburban Chicago, the workshop will commence on January 18 at 6 p.m. at William Fremd High School, 1000 S. Quentin Rd., Palatine.

In the City of Chicago, the workshop will begin on January 16 at 6 p.m. at the Board of Education, 228 North LaSalle St. (Room 650).

We recommend that those participants who reside in the areas between Bedford Park and Crete attend the southwest suburban workshop, and those residing between Elmhurst and Buffalo attend the northwest suburban workshop. In order for us to plan on approximately equal groups you have tentatively been assigned to the _____ workshop. You may however, choose to attend the other workshop if it is at a more convenient time or location.

We are looking forward to working with you at one of the workshops. If you have any questions, please call 217/333-3275.

Sincerely yours,

Hollie B. Thomas
Assistant Professor

pd

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

COLLEGE OF EDUCATION
DEPARTMENT OF VOCATIONAL
AND TECHNICAL EDUCATION
DIVISION OF AGRICULTURAL EDUCATION

EDUCATION BUILDING
URBANA, ILLINOIS 61801
AREA CODE 217 333-3166

January 8, 1973

Dear

This is to inform you that the workshop for current and prospective teachers of applied biological science has been cancelled for the East St. Louis - Collinsville area. Enrollment was not sufficient to merit conducting this workshop.

Enclosed is your check. We will keep your enrollment form in case we are able to locate sufficient enrollment to start the course in April.

If you know of other teachers who would be interested in such a workshop at a later date, please let us know.

Sincerely yours,

Hollie B. Thomas
Assistant Professor

pd
Enc.

Appendix D

Materials Developed for Workshop

TEACHER'S SELF RATING

Name _____ Date _____

School _____ Subject _____

Teaching Experience:

1-3 Years _____ 4-8 Years _____ 9-15 Years _____ 16 Years or Above _____

This questionnaire provides you an opportunity to rate your confidence as a teacher of applied biological occupations. Select the response on the 4-point scale as if they were points on the straight line ranging from extremely Unconfident to Very Confident. Circle the most appropriate response.

	Extremely Unconfident	Unconfident	Confident	Very Confident
1. Formulating a rationale for an applied biological occupations program	1	2	3	4
2. Explaining the applied biological program to others.	1	2	3	4
3 Working with administration in developing a program in applied biological occupations.	1	2	3	4
4. Determining the content of related instruction for applied biological occupation placement.	1	2	3	4
5. Developing a complete course of study in applied biological occupations.	1	2	3	4
6 Identifying students for the applied biological occupations program.	1	2	3	4
7. Evaluating students enrolled in an applied biological occupations program.	1	2	3	4
8. Organizing and/or using advisory councils to assist in planning and evaluating an applied biological occupations program.	1	2	3	4
9 Teaching applied biological occupations to high school students.	1	2	3	4

	Very Unconfident	Unconfident	Confident	Very Confident
10. Explaining the career education concept.	1	2	3	4
11. Submitting a budget for financing programs in applied biological occupations.	1	2	3	4
12. Locating and securing resource materials in applied biological occupations.	1	2	3	4
13. Determining applied biological occupations opportunities in your community.	1	2	3	4

Course: Ed59 Workshop in Curriculum Development in Vocational and Technical Education - Applied Biological Occupations

Subject: Course Outline

I. Introduction and Orientation

A. Becoming acquainted with the class

B. Introducing the workshop

C. Identification of problems and concerns

II. Understanding Basic Concepts

A. Career Education

B. Vocational Education

C. Applied Biological Occupations

D. Basic and Applied Science

III. Career Opportunities in Applied Biological Occupations

A. Assess employment opportunities

B. Assess interests of students

C. Selecting a priority strategy

IV. Employer and Job Requirements for persons employed in Applied Biological Occupations

A. Determine tasks performed on the job

B. Determine tasks required for hiring, job success, and promotion

C. Assess differences and commonalities of employment tasks.

V. Involving the Community through an Advisory Council

A. Securing administrative support

B. Selecting council members

C. Planning the organizational meeting

D. Developing a program of activities

VI. Selecting a Program of Applied Biological Occupations to offer Students

A. Determine the skills and knowledges required to perform specified tasks

B. Determine the common areas of specified skills and knowledges

C. Determine a sequence of program offerings

D. Designing occupational placement / work-study programs

E. Assess available resources, i.e. school and community

F. Appraise current programs

VII. Selecting Course Content

A. Determine the skills, knowledges, and attitudes the student is expected to learn

B. Writing educational objectives

C. Determine course sequence

D. Identify curriculum materials

VIII. Designing Instructional Units

A. Define intended student outcomes

B. Assess entry level skills and knowledges

C. Identify instructional aids / materials

D. Motivating students

IX. Identifying Students

A. Counseling prospective students

X. Evaluation

A. Determine criteria for student evaluation

B. Determine criteria for program evaluation

XI. Student Youth Groups

A. Understanding the role of youth groups

B. Organizing a student youth group

XII. Funding

A. Determining the costs of a program of applied biological occupations

B. Understanding the state financial support for vocational education

XIII. Administrative and Community Support

A. Involving parents

B. Involving business / industry

C. Securing administrative support

XIV. Wrap up and Review

January 1973

Course: VOTEC B459

Subject: Term Project

Comments:

1. Your term project should be personally useful to you.

2. We would like to see the development of, and the plans for implementing a new, or the expansion of an existing, program which matches the interests of students and the employment demand of business/industry requiring knowledges and skills that are of an applied biological nature in your school.

3. The term project will include:

   3.1 A description of proposed activities.

   3.2 A rationale for implementing proposed activities.

   3.3 A list of objectives.

   3.4 The procedures (steps) for accomplishing proposed activities including:

      3.4.1 What you will be doing during the workshop.

      3.4.2 What you will need to do following the workshop.

   3.5 A report of what you did toward accomplishing your objectives.

Firm Name _____ Date _____

Address _____

Persons to Contact:

_____ Telephone _____
(Name and Position)

_____ Telephone _____
(Name and Position)

Major Functions of Firm (Describe each function checked):

_____ Contractor:

_____ Processing:

_____ Production:

_____ Sales-Retail:

_____ Sales-Wholesale:

_____ Service:

_____ Warehousing:

_____ Other (Specify):

On the average, how long (in months) does it take you to fill a vacancy?

Full Time	Part Time

FT=Full Time
PT=Part Time

Job Titles	Present No. Employed		Present No. Vacancies		Additions-Turnovers Next 5 Yrs.		Years of Education Desired		Beginning Wage		If you had a vacancy would you hire a new high school graduate who had specific training related to your business? (Yes/No)	
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT

New Job Titles Anticipated During Next Five years						

A WORKSHOP FOR

PRESENT AND PROSPECTIVE TEACHERS

OF

APPLIED BIOLOGICAL OCCUPATIONS

IN

METROPOLITAN AREAS

Sponsored and Conducted jointly by:

The Department of Vocational and Technical Education
Division of Agricultural Education
University of Illinois, Urbana-Champaign

and

Illinois Division of Vocational and Technical Education
Springfield, Illinois

WOULD YOU LIKE TO:

- Motivate more students to study biological science?
- Conduct a program that will lead students toward a career in applied biological science?
- Increase student participation in scientific exploration?
- Increase employment opportunities for your students after graduation?
- Participate in a workshop with other teachers with similar concerns for which you may receive four semester hours credit if you desire? (For those desiring credit, the tuition is $88.00, payable to the University of Illinois at the beginning of the course).

If your answer to any of these questions is YES, we have something for you.

A WORKSHOP IN APPLIED BIOLOGICAL AND AGRICULTURAL OCCUPATIONS FOR CURRENTLY EMPLOYED TEACHERS OF SCIENCE AND OTHER RELATED FIELDS IS BEING SPONSORED BY THE BOARD OF VOCATIONAL EDUCATION AND REHABILITATION DIVISION OF VOCATIONAL AND TECHNICAL EDUCATION. THIS WORKSHOP IS DESIGNED TO PROVIDE CURRENTLY EMPLOYED TEACHERS WITH THE COMPETENCIES NEEDED IN THE TEACHING OF APPLIED BIOLOGICAL AND/OR AGRICULTURAL OCCUPATIONS IN THE URBAN AREAS. PARTICIPANTS HAVE THE OPTION OF ENROLLING FOR GRADUATE CREDIT OF ONE UNIT (FOUR SEMESTER HOURS).

A workshop will be conducted in each of the following locations:

* Collinsville Area Vocational Center - Eleven sessions of 3 hours each
  Time - 6:30 p.m.
  January 11, 18, 25
  February 1, 8, 15, 22
  March 1, 8, 15, 22

* City of Chicago, Board of Education Building - Eleven sessions of 3 hours each
  Time - 6:00 p.m.
  January 16, 23, 30
  February 6, 13, 20, 27
  March 6, 13, 20, 27

* Suburban Chicago - Eleven sessions of 3 hours each
  Time - 6:00 p.m.
  January 17, 24, 31
  February 7, 14, 21, 28
  March 7, 14, 21, 28

*Tentative locations and times

POSSIBLE WORKSHOP TOPICS:

- What is Career Education?
- Relationship between basic science and applied science.
- Laboratory experiences.
- Resources available at the state and national levels.
- Community resources.
- Application of applied science to the experiences of students in the real world.
- Identifying interested students.
- Recruiting students.
- Courses of study.
- Sources of instructional materials.
- Visual aids.

Topics included in the workshop will conform to the needs of the participants.

A WORKSHOP FOR PRESENT AND PROSPECTIVE TEACHERS OF APPLIED BIOLOGICAL OCCUPATIONS

A workshop will be conducted in each of the following locations:

* Collinsville Area Vocational Center - Eleven sessions of 3 hours each
  Time - 6:30 p.m.
  January 11, 18, 25
  February 1, 8, 15, 22
  March 1, 8, 15, 22

* City of Chicago, Board of Education Building - Eleven sessions of 3 hours each
  Time - 6:00 p.m.
  January 16, 23, 30
  February 6, 13, 20, 27
  March 6, 13, 20, 27

* Suburban Chicago - Eleven sessions of 3 hours each
  Time - 6:00 p.m.
  January 17, 24, 31
  February 7, 14, 21, 28
  March 7, 14, 21, 28

*Tentative locations and times

POSSIBLE WORKSHOP TOPICS:

- What is Career Education?
- Relationship between basic science and applied science.
- Laboratory experiences.
- Resources available at the state and national levels.
- Community resources.
- Application of applied science to the experiences of students in the real world.
- Identifying interested students.
- Recruiting students.
- Courses of study.
- Sources of instructional materials.
- Visual aids.

Topics included in the workshop will conform to the needs of the participants.

A WORKSHOP FOR PRESENT AND PROSPECTIVE TEACHERS OF APPLIED BIOLOGICAL OCCUPATIONS

If you are interested in enrolling in the workshop, please complete and return this form with five dollars application fee. Your application fee will be applied to instructional materials or returned to you at the close of the workshop.

Name _____ School _____ Telephone _____

Mailing Address _____ Zip Code _____

Subject(s) Taught _____

I plan to enroll in the workshop for: ____ Credit ____ Non-credit

I would attend the workshop conducted in: ____ Collinsville
____ City of Chicago
____ Suburban Chicago

Return your application with check for five dollars, payable to the **University of Illinois** to:
Dr. Hollie B. Thomas, Assistant Professor
Department of Vocational and Technical Education
Division of Agricultural Education
University of Illinois
Education Building
Urbana, Illinois 61801

Return applications by December 18, 1972

FOR ADDITIONAL INFORMATION: Telephone 217-333-3275

PLEASE USE THIS SPACE FOR COMMENTS

According to studies conducted, students in the metropolitan areas expressed interest in the following areas of Applied Biological and Agricultural Occupations:

ORNAMENTAL HORTICULTURE

- Arboriculture
- Floriculture
- Greenhouse Management
- Landscaping
- Nursery Management
- Turf Management

AGRICULTURAL RESOURCES

- Forest
- Recreation
- Soils
- Wildlife
- Water and Air
- Fish
- Range

FORESTRY

- Wood Utilization
- Recreation
- Special Products

AGRICULTURAL PRODUCTS

- Laboratory Technician
- Buyer
- Product Inspector
- Product Salesman
- Quality Control Manager
- State Inspector
- Appraiser

AGRICULTURAL MECHANICS

- Power and Machinery
- Agricultural Structure and Convenience
- Soil and Water Management
- Agricultural Construction and Maintenance
- Agricultural Electrification
- Agricultural Technology

AGRICULTURAL PRODUCTION

- Animal Science
- Plant Science

Appendix E

Pretest and Posttest Data

TABLE ____. Pretest, posttest and gain scores of science teachers selecting various items regarding the workshop in Applied Biological and Agricultural Occupations.

N = 50 | Extremely Unconfident 1 | Unconfident 2 | Confident 3 | Very Confident 4

Number	Item	Mean Pretest	Mean Posttest	Mean Gain
1.	Formulating a rationale for an applied biological occupations program	2.33	3.12	.84
2.	Explaining the applied biological program to others	2.20	3.10	1.12
3.	Working with administration in developing a program in applied biological occupations	2.33	3.10	.77
4.	Determining the content of related instruction for applied biological occupation placement	2.18	2.97	.79
5.	Developing a complete course of study in applied biological occupations	1.77	2.84	1.07
6.	Identifying students for the applied biological occupations program	2.41	2.99	.58
7.	Evaluating students enrolled in an applied biological occupations program . .	2.36	3.12	.76
8.	Organizing and/or using advisory councils to assist in planning and evaluating an applied biological occupations program	2.25	2.49	.24
9.	Teaching applied biological occupations to high school students	2.37	3.06	.69
10.	Explaining the career education concept. .	2.23	3.20	.97
11.	Submitting a budget for financing programs in applied biological occupations. .	1.87	2.56	.69
12.	Locating and securing resource materials in applied biological occupations	2.17	3.16	.99
13.	Determining applied biological occupations opportunities in your community	2.22	3.14	.92
		28.69	39.12	10.43
	TOTAL MEANS	2.20	3.01	.80

Appendix F

DVTE Evaluation Forms

N = 43

WORKSHOP EVALUATION
Participant's Form

Workshop Title: Applied Biological & Physical Principles

Agency or Institution: University of Illinois

The activity you have just completed was sponsored by the Illinois Division of Vocational and Technical Education. Your opinions of the activity will aid DVTE in improving future staff activities. Please return by (1) leaving on the form in the envelope provided by the workshop, or (2) properly fold, tape, staple, and mail directly to the address which appears.

Please rate the workshop by placing an "x" along the following continuums.

	4	3	2	1		Mean
1. In terms of helping trainees become employable, how great a need was this activity attempted to fulfill?						
(Great need)	16	24	4	1	(Insignificant need)	3.39
2. How well was the workshop organized?						
(Well organized)	6	26	9	2	(Lacked organization)	2.84
3. How applicable to your needs was the workshop content?						
(Very applicable)	11	22	9	1	(Unapplicable)	3.00
4. How would you recommend this workshop to someone who has a similar job?						
(Highly recommended)	11	24	8	0	(Don't [illegible] to go)	3.07
5. How would you rate the overall instruction? (If more than one, write in the name along the continuum where he or she would be placed.)						
(Excellent)	12	24	7	0	(Poor)	3.12
6. How appropriate was this activity in terms of what you believe to be career education?						
(Very appropriate)	15	23	5	0	(In appropriate)	3.24
7. To what degree will what you have learned affect your behavior in your job?						
(Considerable)	22	15	5	1	(Very little)	3.35
8. How much do you feel you learned?						
(More than anticipated)	14	22	6	1	(Less than expected)	3.14
9. How much material was presented?						
(Too much for the time available)	8	21	12	2	(Not enough for the time expended)	2.81
10. How would you rate the activity overall?						
(Excellent)	11	27	5	0	(Unsatisfactory)	3.14

11. What are your needs for in-service activities for the future? Please list specific topics.

30.90

3.09

Please relate additional comments on this workshop on the reverse side.

(Workshop Evaluation
Project Director's Form)

Workshop Title: Applied Biological & Agricultural Occupations

Contract No. VOT - 83 - 006

Agency or Institution: University of Illinois

Please complete the following upon conclusion of your workshop, and mail to the Professional and Curriculum Development Unit. This is not to be a final report.

Please rate the workshop on the following continuums.

In terms of helping learners become employable, how great a need has this activity attempted to fulfill?

(Great need) | X | | | | (Insignificant need)

How appropriate was this activity in terms of what you believe to be career education?

(Very appropriate) | X | | | | (Inappropriate)

What effect will the workshop have on participant's behavior in their jobs?

(Considerable) | X | | | | (Very little)

How much material was presented?

(Too much for the time available) | | X | | | (Not enough for the time expended)

How would you rate the activity overall?

(Excellent) | X | | | | (Unsatisfactory)

Did you request assistance from any DVTE staff? Yes
If so, please list them.

Mr. Allan Utech, Consultant

How would you rate the quality of these consultants? (If more then one, write in the name along the continuum where they should be placed.) (Describe specific strengths and weaknesses on reverse side.)

(Excellent) | X | | | | (Poor)

How would you rate the cooperation from the PCDU in helping you conduct this activity?

(Excellent) | X | | | | (Poor)

Number of workshop participants: 62

What percentage of these were university students last semester? 0 %

Was academic credit offered for this workshop? Yes

What percentage of the participants received academic credit? 80 %

Are plans being made to offer this activity as a regular course in a university's curriculum? No

What do you believe to be the needs for in-service activities for the future? Please list specific topics and comments concerning this workshop on the reverse side.

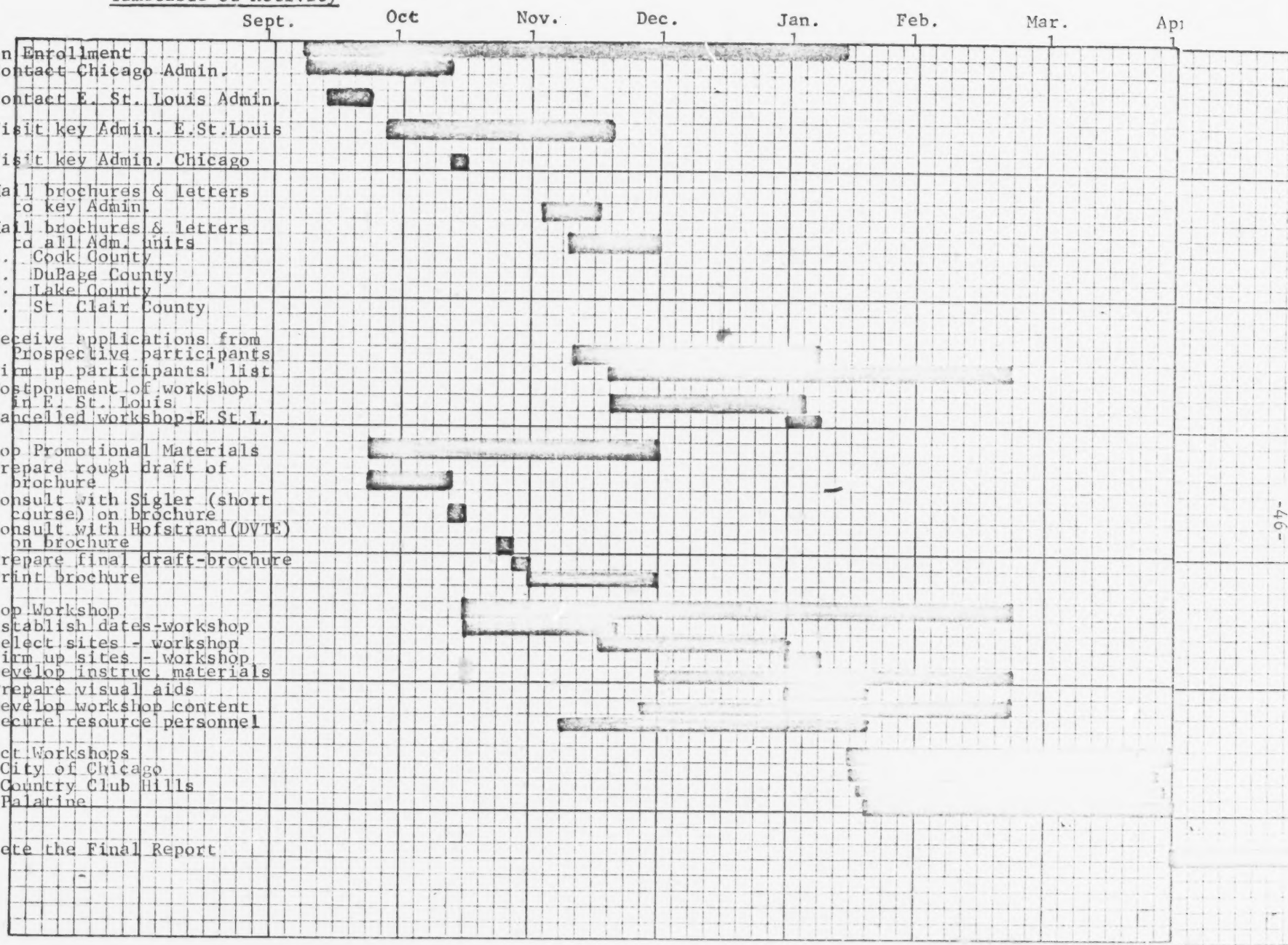
Project Director

Hollie B. Thomas
Assistant Professor

Appendix G

Timetable of Activity

Timetable of Activity


Sept. 1
Oct 1
Nov. 1
Dec. 1
Jan. 1
Feb. 1
Mar. 1
Apr 1
A. Obtain Enrollment
1. Contact Chicago Admin.
2. Contact E. St. Louis Admin.
3. Visit key Admin. E.St.Louis
4. Visit key Admin. Chicago
5. Mail brochures & letters to key Admin.
6. Mail brochures & letters to all Adm. units
a. Cook County
b. DuPage County
c. Lake County
d. St. Clair County
7. Receive applications from Prospective participants
8. Firm up participants' list
9. Postponement of workshop in E. St. Louis
10. Cancelled workshop-E.St.L.
B. Develop Promotional Materials
1. Prepare rough draft of brochure
2. Consult with Sigler (short course) on brochure
3. Consult with Hofstrand(DVTE) on brochure
4. Prepare final draft-brochure
5. Print brochure
C. Develop Workshop
1. Establish dates-workshop
2. Select sites - workshop
3. Firm up sites - workshop
4. Develop instruc. materials
5. Prepare visual aids
6. Develop workshop content
7. Secure resource personnel
D. Conduct Workshops
1. City of Chicago
2. Country Club Hills
3. Palatine
E. Complete the Final Report
F.